

Review: Who's asking? Native Science, Western Science and Science Education

By Douglas L. Medin and Megan Bang

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One early indication of the Western seizure on scientific discourses is due to Philippe Galle, the Dutch publisher of the XVI century who engraved the allegory of Temperance depicted by Bruegel the Elder. The Flemish painter imagined characters attending the exercise of arts (music, astronomy, dialectics and more) with a new, quantitative perspective. In a cutting conserved at the British Museum, figures in the sketch look at reality as an aggregate of multiform units: leagues, degrees, money, letters, hours, music notes etc., whose systematic measurement initiated the scientific revolution. The same approach still affects applied, social, and cultural activities in the West, where estimate of value merely stands on the exercise of accountability.

The authors of *Who's Asking* confute the Western reconstruction of scientific reality as the only possible way to appreciate the world and the human dimension. Both authors are educators: Megan Bang currently teaches Learning Sciences and Human Development at Washington University, and she was previously the director of education at the American Indian Center (AIC) of Chicago. Douglas L. Medin teaches Psychology, Education and Social Policy at Northwestern University and investigates mental models of nature round the Menominee Nation, which belongs to the Chicago Indian community. Their work tackles the recurring issue of educational underachievement of minority ethnic students challenging the very nature of science and scrutinising how people learn under the influence of their own culture.

Medin and Bang conduct their research addressing the lack of diverse insights as a major endangerment for science education and observing how diversity providing new perspectives leads to a more effective perception. Native Americans are the main minority whose scientific view is considered here, but the same rationale is applicable to other minorities too.

The initial part of the book reviews the history of science confuting that its maps originated uniquely in the West. The focus turns then on science education programs insisting that they are culturally and community-based. For example, the androcentric character of western science (and society) emerges in our perception of evolution whose attributes and terminology are gender biased; thus, discussing sexual selection in science, should we talk about *female receptivity* (passive) or *female choice* (active)?

Other evidence comes from the rural (Menominee reservation in Wisconsin) and urban contexts (AIC of Chicago) that Medin and Bang explore in detail. The heart of the volume is a case study of Native American orientations towards the natural world, used to exemplify how culture affects science-related practices. Native communities understand science and the world we live in using an unbroken view; it is not a sort of holistic approach to nature mixed with factually settled practices, rather it is a distinct perspective on doing science more relevant today than ever. Yet, Europeans see humans as separated from nature. This is explicit in language and implicit in a wide range of scientific affairs; moreover, this tendency has consequences on epistemology and implications for science related values and practices. It is difficult to valorize science education –Medin and Bang observe – when its discourses systematically undermine the knowledge, practices, and values of Native students, whose community see human relationships as inextricably related with the rest of nature.

The title (*Who's Asking?*) of this volume underlines the authors' advice: reconstructing what counts as science is crucial for more equitable science education and science is not value neutral as it reflects a set of culturally embedded social endeavours. The information provided with the work, approaching an open discourse of nature and science, draws from a wide-range of fields including philosophy of science, social studies, psychology, education and cultural studies. Teachers of science and pedagogy will appreciate the text along with the collection of case studies included.

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